

Claims

1. An apparatus for filling a food material into a cavity of an object, comprising:
 - a) a conduit having a conduit inlet port, a conduit outlet port, and an interior passageway extending between the conduit inlet port and the conduit outlet port, the conduit adapted to permit passage of a food material having a first moisture content through the interior passageway from the conduit inlet port to the conduit outlet port;
 - b) a fluid injector fluidly connected to the conduit and to a fluid source, the fluid injector adapted to permit injection of a fluid into the interior passageway of the conduit for mixing with the food material passing therethrough to obtain a food material having a second moisture content greater than the first moisture content;
 - c) a nozzle having a nozzle inlet port, a nozzle outlet port, and an interior passageway extending between the nozzle inlet port and the nozzle outlet port, the nozzle being fluidly connected to the conduit and the fluid injector, the nozzle outlet port being adapted to fill the food material having the second moisture content into the cavity of the object.
2. An apparatus according to claim 1, further comprising an axially rotatable screw located within the conduit, fluid injector and nozzle for advancing the food material towards and through the nozzle outlet port.
3. An apparatus according to claim 1, wherein the fluid injector has an annular ring surrounding the conduit outlet port, the conduit has a plurality of apertures positioned around its circumference adjacent the conduit outlet port, and the conduit outlet port is received in the fluid injector so that the plurality of apertures are located within the annular ring.
4. An apparatus according to claim 1, wherein the nozzle outlet port is restricted to generate back pressure in the conduit when the food material having the second moisture content passes through the nozzle outlet port.

5. An apparatus according to claim 4, wherein the fluid injector additionally comprises a valve between the conduit and the fluid source for controlling fluid flow through the injector, the valve being biased to a closed position and adapted to permit fluid flow through the fluid injector when the back pressure generated in the conduit by the food material having the second moisture content passing through the nozzle outlet port exceeds a predetermined value.

6. An apparatus according to claim 5, wherein the valve comprises a diaphragm and a valve seat, the diaphragm being in contact with the valve seat while in the closed position to prevent fluid flow through the fluid injector, and the predetermined value is equal to the minimum back pressure on the downstream side of the valve seat required to lift the diaphragm from the valve seat to permit fluid flow through the fluid injector and into the interior passageway of the conduit.

7. An apparatus according to claim 1, further comprising a hopper fluidly connected to the conduit for receiving the food material having the first moisture content and guiding it into the conduit.

8. A method for filling a food material into a cavity of an object, comprising:

a) advancing a food material having a first moisture content through an interior passageway of a conduit from a conduit inlet port towards a conduit outlet port;

b) introducing a fluid into the interior passageway and mixing the fluid with the food material to obtain a food material having a second moisture content greater than the first moisture content; and

c) filling the food material having the second moisture content into the cavity of the object.

9. A method according to claim 8, wherein the fluid is introduced in step (b) into the conduit by passing it through a fluid injector, the fluid injector having an annular ring surrounding the conduit outlet port, the conduit has a

plurality of apertures positioned around its circumference adjacent the conduit outlet port, and the conduit outlet port is received in the fluid injector so that the plurality of apertures are located within the annular ring.

10. A method according to claim 8, further comprising the step of increasing the back pressure in the conduit prior to step (b).

11. A method according to claim 10, wherein the fluid is introduced in step (b) into the interior of the conduit when the back pressure in the conduit exceeds a predetermined value.

12. A method according to claim 8, wherein the object is a raw meat product.

13. A method according to claim 12, wherein the raw meat product is poultry.

14. A method according to claim 8, wherein the object is a fish or seafood product.

15. A method according to claim 8, wherein the object is a container.

16. A method according to claim 15, wherein the container is a bag.

17. A method according to claim 8, wherein the food material is a stuffing.

18. A method according to claim 17, wherein the first moisture content is between about 5 % w/w to about 10 % w/w.

19. A method according to claim 18, wherein the second moisture content is between about 45 % w/w to about 55 % w/w.

20. An object having a cavity containing a food material when filled by the method of claim 8.

- 21. An object according to claim 20, wherein the object is a raw meat product.
- 22. An object according to claim 21, wherein the raw meat product is poultry.
- 23. An object according to claim 20, wherein the object is a fish or seafood product.
- 24. An object according to claim 20, wherein the object is a container.
- 25. An object according to claim 24, wherein the container is a bag.
- 26. An object according to claim 20, wherein the food material is a stuffing.